

## SEARCH RESULTS

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### ● Moments and centroids

from analysis

The moment of an element of area about an axis (perpendicular to the plane of the area) is defined as the product of the element of area by its distance from the axis. In particular, the moment of  $\Delta A$  about the x-axis is  $y\Delta A$ , and the moment about the y-axis is  $x\Delta A$  (see Figure 11).

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### ● Barycentric and areal coordinates

from trigonometry

If two masses of magnitude  $t_1$  and  $t_2$  are placed at points  $P_1$  and  $P_2$ , their total mass appears to act at point  $P$  on the line  $P_1P_2$ .  $P$  divides the distance  $P_1P_2$  in the ratio...

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### ● Colour atlases

from colour

Calculating chromaticity and luminance is a scientific method of determining a colour, but for the rapid visual determination of the colour of objects, a colour atlas such as the *Munsell Book of Color* is often used. In this system colours are matched to printed colour chips from a three-dimensional colour solid whose parameters are hue...

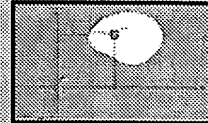


Figure 11: For a plane area  $A$ , the moment of an element of area ...

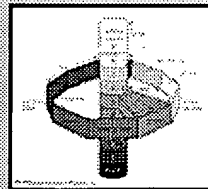


Figure 8: The hue, value, and chroma coordinates of Munsell's colour solid.

### ● **Body wave solutions**

*from solids mechanics*

By looking for body wave solutions in the form  $u(X, t) = pf(nX - ct)$ , where unit vector  $n$  is the propagation direction,  $p$  is the polarization, or direction of particle motion, and  $c$  is the wave speed, one may...

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### ● **Concepts of stress, strain, and elasticity**

*from solids mechanics*

The English scientist Robert Hooke discovered in 1660, but published only in 1678, that for many materials the displacement under a load was proportional to force, thus establishing the notion of (linear) elasticity but not yet in a way that was expressible in terms of stress and strain. Edme Mariotte in France published similar discoveries in...

### ● **Spectroscopy systems**

*from radiation measurement*

The pulse-mode counting systems described above provide no detailed information on the amplitude of the pulses that are accepted. In many types of detectors, the charge  $Q$  and thus the amplitude of the signal pulse is proportional to the energy deposited by the incident radiation. Therefore, an important set of measurement systems are...

### ● **Variations in the stellar density**

*from Milky Way Galaxy*

The star density in the solar neighbourhood is not perfectly uniform. The most conspicuous variations occur in the  $z$  direction, above and below the plane of the Galaxy, where the number density falls off rapidly. This will be considered separately below. The more difficult problem of variations within the plane is dealt with here.

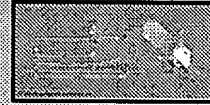


Figure 7: Transverse motion of an initially straight beam, shown at left as an elastic line and at...



Figure 3: Representative pulse-height spectra for a source emitting gamma rays of many different...

**● Euler, Leonhard**

Swiss mathematician and physicist, one of the founders of pure mathematics. He not only made decisive and formative contributions to the subjects of geometry, calculus, mechanics, and number theory but also developed methods for solving problems in observational astronomy and demonstrated useful applications of mathematics in technology and...

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**● Basic notions of universal algebra**

*from algebra*

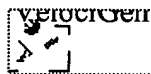
An operation on a set  $A$  is a mapping or function defined on  $A$  with values in  $A$ . For example, if  $A$  is mankind, then "mother of  $x$ " is an operation in one argument, or a unary operation (here the fact that the mapping is undefined for Adam and Eve is ignored). On the set of integers, the operation of...

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